

Return to Flight SPOTLIGHT

ISSUE 1 • APRIL 2004

CRAWLER TRANSPORTER



Cover Photo: The Crawler Transporter, carrying Mobile Launcher Platform number three with twin solid rocket boosters bolted to it, inches along the crawlerway at various speeds up to one mph during special tests designed to gather vibration data. This data will be used to develop future maintenance requirements on transporter equipment and the flight hardware.

Workhorse Crawlers Undergo Major Upgrades:

Among the largest tracked vehicles ever constructed, the Kennedy Space Center's two Crawler Transporters (CT) have the arduous task of carrying the Space Shuttle stack to the launch pad. Each requires a team of nearly 30 engineers, technicians and operators to ensure the Shuttle reaches its final destination safely.

These massive machines have performed well for more than 40 years. Originally designed for the Apollo program, the crawlers have logged more than 3,400 miles during their lifetime or about the same distance as driving from Miami to Seattle. Responsibility for the ongoing maintenance work for these monstrous vehicles fall to United Space Alliance's Transporter Operations team, and currently that team is leading the effort to complete one of the most complex modifications to the CTs in their lifetime.

Work began almost one year ago when CT Number Two was targeted for upgrades to five major subsystems. The upgrade of the Motor Control Center, which houses the switchgear and associated hardware necessary to electrically control all of its major systems onboard, was the primary driver for the modifications.

Installation of a new ventilation system for the engine and pump rooms, along with new diesel engine radiators, were integrated with the Motor Control Center (MCC) upgrade. Previously, a tremendous amount of diesel exhaust filled these rooms. The new ventilation system allows for additional clean air to circulate, dropping temperatures by up to 25 degrees. Two additional subsystem modifications implemented during this five-month period included the removal and replacement of the diesel engine exhaust systems and the two driver's cabs.

During the slow, six-hour trip to either Launch Pad, it is important to ensure the technicians are as safe and comfortable as possible so they can focus on the job at hand. Noise levels have always been a safety concern while the CT is operational. Although verification testing is still ongoing, modifications made to the exhaust systems and driver cabs will significantly reduce decibel levels surrounding the vehicle.

United Space Alliance engineers and technicians performed the removal and replacement of the Motor Control Center cabinets and 60 Hz control panels. They replaced old instrumentation and power cables, and verified electrical termination. They completed refurbishment of 70 treadbelt shoes permitting the replacement of three complete treadbelts (171 shoes) in Fiscal Year 2003.

Many Kennedy Space Center organizations contributed to the success of this upgrade, with more than 200 USA employees involved since design efforts began in 2001. Nearly 15,000 labor hours were directly assigned to the work efforts during the outage period for CT 2. With its modifications complete, similar work is planned for this summer with CT 1.

With this service work nearing completion, the employees of Transporter Operations and the CT "work horses" of America's Space Shuttle Program will be ready to support Return to Flight and many more years of service to NASA.

Size:	131 Feet Long; 113 Feet Wide; 20 Feet High
Weight:	6 Million Pounds
Speed:	1 MPH Loaded; 2 MPH Unloaded
Loads:	MLP w/ Shuttle 12 Million Pounds
Engines:	(2) 16 Cylinder; 2,750 H.P.
Fuel:	Diesel, 5,000 Gallon Capacity
Consumption:	42 FPG (Feet per Gallon)



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